GIS-Assisted Policy Impact Evaluation: An Analysis of Opiate Agonist Treatment Availability in New York City (2001-2003)

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Abstract

In March 2001, regulation of methadone maintenance treatment was transferred from the Food and Drug Administration to the Substance Abuse and Mental Health Services Administration. The purpose of this change was to increase treatment availability and improve treatment quality for the nearly one million active and recovering heroin addicts in this country. This paper provides an innovative approach to policy evaluation. Using Geographic Information Systems (GIS), government officials can supplement basic quantitative and qualitative evaluation approaches with a tool that helps communicate research findings to stakeholders who are often external to the policy impact area. In addition to determining whether goals have been accomplished, this project provides an innovative model of GIS application to common social research activities.

Introduction

The estimated social cost of drug and alcohol addiction in the United States is $294 billion per year. This includes the cost of lost productivity, health care, criminal justice, law enforcement, welfare and other social services. In 1998, the states spent a combined total of $81.3 billion on substance abuse. Of this money, 96% went to social issues surrounding drug abuse and 4% went to treatment and recovery services (MN Department of Human Services 1).

This evidence of social cost is not the only basis to argue the need for improved drug abuse services. Heroin has proven to be one of the most addictive and destructive drugs in our society. Despite 1980s research suggesting that heroin use was declining, the use of heroin is continuing to rise. The estimated number of heroin users in the United States increased from 600,000 in the 1990s to well over 900,000 in 2001 (D'Aunno and Pollack 2). The most widely used treatment for heroin addiction is methadone maintenance treatment (Ball 214).

Since the early 1930's, heroin addiction has been posed as a criminal matter rather than medical. Early drug treatment policies responded to fear of the social problems that are associated with drug abuse (poverty, welfare expenditures, crime, homelessness, and unemployment) rather than primary concern for the welfare of heroin addicts.

Methadone maintenance treatment has been controversial since its inception in the early 1960s. Many politicians and members of the public feel that methadone maintenance replaces one addiction with another.

This concern led to the regulation of methadone treatment by the Food and Drug Administration (FDA), a policy with which many mental health and drug treatment professionals have since disagreed. In 1970, the FDA established a treatment protocol to be used by methadone providers. Since most methadone clinics were dependant on federal and state funding, they were wary of diverging from the protocol, even as the best practices debate continued. This FDA ideal is evidence of the troubles that methadone maintenance providers faced when trying to provide addicts with adequate treatment. The rigidity of this model can be seen in the following:

1. Exclusion of minors.
2. Documentation of prior and present addiction, *and* a confirmed history of one or more prior treatment failures.
3. Consideration of discontinuing the drug for patients who adjusted well to maintenance.
4. Termination from treatment for patients who continued to use narcotics or other drugs, or who exhibited alcoholism or continued criminal activity after entering treatment.
5. Prior Bureau of Narcotics and Dangerous Drugs (BNDD) approval of any methadone program (Attewell and Gerstein 314).

In 1997, the National Institutes of Health officially took the position that federal and state laws governing methadone maintenance treatment practices were inappropriately limiting opiate addiction treatment services, which by then had expanded to include opiate agonist therapies other than methadone. Finally, the Drug Addiction Treatment Act of 2000 allows qualified physicians to treat opiate addiction with Schedule III, IV, and V narcotic medications. The Substance Abuse and Mental Health Services Administration (SAMHSA) assumed authority to regulate heroin addiction treatment services through the Center for Substance Abuse Treatment (CSAT).

The CSAT established an accreditation process for approval of Opiate Treatment Programs (OTPs) based on clearly articulated best practices and standards of care, and extending the opportunity for accreditation to any medical practice. The following qualifications must be met in order for physicians to treat opiate addicts:

1. Must hold a current state medical license.
2. Must hold a DEA registration number.
3. Must hold a subspecialty board certification in addiction psychiatry.
4. Must hold an addiction certification from the American Society of Addiction Medicine.
5. Complete not less than eight hours of training with respect to the treatment and management of opiate-addicted patients.
6. The physician has participated as an investigator in one or more clinical trials leading to the approval of a narcotic drug.
7. Physician must attest that they have the capacity to refer addiction treatment. (SAMHSA Data 2003)

Because only an estimated 20% of the nation's heroin users were seeking treatment in 2002, SAMHSA predicted

that the new policies will better suit primary care physicians and increase the number of people actively pursuing sobriety. This change is easily understood within common models of redistributive and regulatory government practices, the goal of which is typically to change treatment provider behavior in order to benefit clients.

With regulatory authority, the OASAS established monitoring practices. Treatment providers must provide the OASAS with monthly reports of capacity and census. ***Capacity*** is the maximum number of patients that an authorized site can serve. ***Census*** is the number of clients the site actually served. Capacity numbers are established for every site by OASAS, through an extensive application process OASAS requires that before the application is initiated, discussions with the local government unit and community leaders be completed. The impact of these discussions will be reviewed later.

The purposes of this study are to:

1. Determine if the distribution of methadone treatment has become more available in the New York City metropolitan area since the 2001 regulatory transition;
2. Determine if treatment settings have diversified to include primary health care settings; and
3. Demonstrate the ability of geographic information systems to aid in policy evaluation.

Methods

Data Acquisition

The beginning stages of mapping involve obtaining base layers that will serve as the foundation for plotting sites in the New York City area. Base layers used were county, roads, and water layers from the ESRI website. These were downloaded and unzipped before being added to the ArcGIS project. New York City is divided into five boroughs, Bronx, Manhattan, Queens, Brooklyn, and Staten Island. Each of these are also a county, although some have different names, (Bronx, New York, Queens, Kings, Richmond.) The political boundaries of the city of New York are the same as the counties, therefore no cities layer was needed.

Data for state authorized methadone clinics was obtained in several formats from the New York State Office of Alcoholism and Substance Abuse Services (OASAS). That office receives monthly reports from each OTP regarding the number of slots authorized and filled. The first set of data was in Excel format and contained over 2700 records, including *county name, program name, month, capacity, census*, and *zip code* variables. There are a total of 86 OTPs in the five boroughs supervised by the OASAS. Each site had 33 entries, one for every month dating back to January 2001. The second set of data was a booklet listing all drug treatment programs (not just methadone providers) in the state of New York including *program name, contact name, phone number, address, treatment type*, and *services provided* variables. The final data set was an Excel workbook including variables *contact name* and *phone numbers*.

Data Development

These datasets were aggregated into one database (Figure 2). The pertinent information was filtered from the three datasets. This process was cumbersome

because of the excessive amount of information obtained. Once the database was cleaned and sorted 33 months of data were clustered into three month units, averaging capacity and census of the three months for each calendar quarter for each site.

The next step was to generate graphs for each site. Again, this step was completed in Excel, using the Chart Wizard as a guide. The variables included *capacity, census, and quarter* (Figure 1).

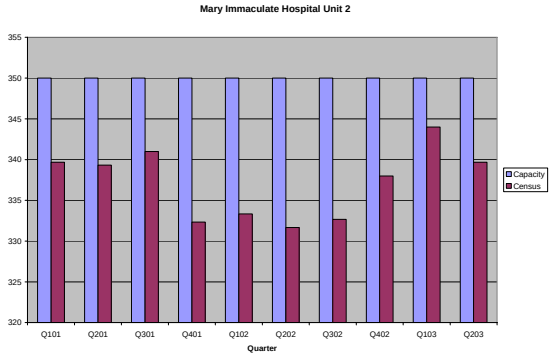

Figure 1. Example of Site Chart

To increase the durability of the ArcGIS map, the five county shapefiles, the roads and water layers were each made into one layer using the Geoprocessing Wizard.

Clinic sites were mapped in the ArcGIS project concurrently with database management. A new point shapefile layer was created using ArcCatalog. A geocoding service was also created in ArcCatalog using the New York roads theme as the reference layer. The geocoding service allowed exact site locations to be mapped by using the Find function of ArcGIS. The researcher inputs street addresses, and the program located addresses, allowing creation of a new point in an editing session of ArcMap. This method was used to locate each clinic (Figure 3).

During the geocoding process, research found that many of the clinics are very close to one another geographically, some even in the same

Attributes of Sites

FID	Shape*	Id	Name	Address	Phone_Numb	Chart_Name
0	Point	1	ARTC - Bushwick MMTP Clinic	1149 Myrtle Avenue - Brooklyn	718-574-1400	ARTC - Bushwick MMTP
1	Point	2	ARTC - East New York MMTP Clinic	494 Dumont Avenue - Brooklyn	718-385-4000	ARTC - East New York MMTP
2	Point	3	ARTC - Fort Greene MMTP Clinic	937 Fulton Street - Brooklyn	718-789-1212	ARTC - Fort Greene MMTP
3	Point	4	BIMC - MMTP Clinic Cumberland	100 Flatbush Avenue - Brooklyn	718-237-9600	BIMC - Cumberland
4	Point	5	BIMC - MMTP Clinic Methodist	25 12th Street - Brooklyn	718-788-6913	BIMC - Methodist
5	Point	7	Kings County Hospital O.D.P. MMTP Clinic 2	600 Albany Avenue - 2nd Flr	7182452641	Kings County 2
6	Point	8	Kings County Hospital O.D.P. MMTP Clinic 1	600 Albany Avenue - 2nd Flr	7182452641	Kings County
7	Point	9	Narco Freedom Court St. MMTP Clinic	217 Court Street	7188020747	Narco #3
8	Point	10	Narco Freedom Redhook MMTP	132-34 Van Dyke Street	7188021111	Narco #4
9	Point	11	S. Brooklyn Medical Services MMTP Clinic	685 Third Avenue	7187882594	S. Brooklyn
10	Point	12	St. Mary's Hospital - Alabama Avenue	480 Alabama Avenue	7184853400	St. Mary's 4
11	Point	13	St. Mary's Hospital - Prospect Place MMTP	1480 Prospect Place	7189532302	St. Mary's 1
12	Point	14	St. Mary's Hospital - MMTP Clinic/Classon#24	635 Classon Avenue	7186224488	St. Mary's 2
13	Point	15	St. Mary's Hospital - Brownsville #30 MMTP	229 Powell Street	7184856000	St. Mary's 3
14	Point	16	Staten Island University Hospital - MMTP Clinic	425 Coney Island Avenue - 1st Flr	7183065125	Staten 1
15	Point	17	Staten Island University Hospital - MMTP Clinic #2	567 East 105th Street - 1st Flr.	7183065125	Staten 2
16	Point	18	City Hospital Center - Elmhurst - MMTP Clinic	79-01 Broadway	7183343195	Elmhurst
17	Point	19	LI Jewish Medical Center - MMTP Clinic	270 76th Avenue	2124708940	Jewish Medical
18	Point	20	Mary Immaculate Hospital - Unit 1 - MMTP	147-20 Archer Avenue - Unit1	2124708940	Immaculate 1
19	Point	21	Mary Immaculate Hospital - Unit 2 - MMTP	147-18 Archer Avenue - Unit 2	7185260101	Immaculate 2
20	Point	22	Narco Freedom - Bridge Plaza MMTP Clinic	37-18 34th Street	7187861012	Narco Bridge
21	Point	23	Staten Island University Hospital - MMTP	392 Seguine Avenue - 1st/2nd Flrs	7182262820	Staten University 1
22	Point	24	Staten Island University Hospital - MMTP	111 Water Street	7184483976	Staten University 2
23	Point	25	ARTC - MMTP Clinic	500 West 180th Street	2125432782	ARTC
24	Point	26	ARTC - MMTP Clinic - Kaleidoscope	132-140 W. 125th St. 6th Floor	2129322677	ARTC Kaleidoscope
25	Point	27	ARTC - MMTP Clinic - Starting Point	132-140 W. 125th St. 6th Floor	2129322677	ARTC Starting

Record: 1 Show: All Selected Records (0 out of 86 Selected.) Options

Figure 2. Site Database as seen in ArcGIS

building. Subsequently, on the sites layer, many of the points are so close to each other that they appear as only one site.

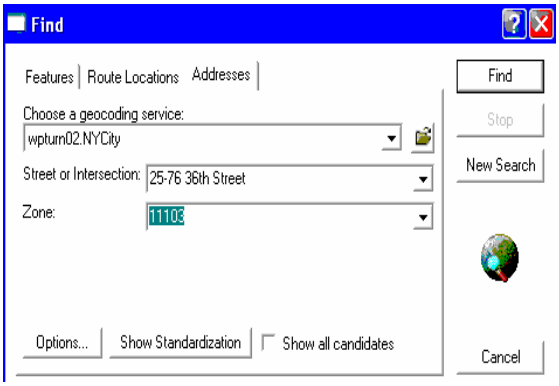

Figure 3. Find Function in ArcGIS

A zoom or closer view must be made the default to allow the user to see that there are several clinics in one location.

Obtaining qualitative data through interviews was one of the most important steps in this project. Qualitative data allows the researcher to gain another perspective on the research issue. Though face to face interviews of clinic administrators would have been preferred, distance and funding limitations influenced the decision to collect qualitative data through telephone interviews. An informed consent document was developed which assured interviewees confidentiality and ethical practices. Development of the interview guide was conducted through brief analysis of the quantitative and demographic data. A face sheet was created to help the interviewer track the data collection process. Field notes from interviews were typed from handwritten notes.

Obtaining qualitative data, no matter what the context, can increase research qualms dramatically. The respondents in this project were asked specific questions about job duties which could be construed as threatening, which in turn could limit subject cooperation. Social desirability bias plays a large role in any type of interview. In self-reporting, subjects often reply to questions with answers that they feel are most socially acceptable, rather than what is most accurate. This is a difficulty that all social scientists encounter and it can lead to unreliable and invalid data. The Hawthorne effect is another complexity of social research. The Hawthorne effect is a distortion of research data caused by the very fact that the subject is involved with research. That knowledge causes the subject to alter behavior or responses. The key to minimize each of these risks is the same – solid rapport skills on the part of the interviewer.

Respondents were selected using the names and phone numbers of program directors obtained from the OASAS. Clinics that showed discrepancies between capacity and census numbers where chosen. Other clinics about which a brief analysis had generated questions were also selected.

A total of eight program directors were interviewed. In piloting the interview guide, the researcher discovered that to obtain the pertinent information the interviews needed to take on a very carefully structured tone. It seemed as if the interviewees were threatened by the questions. The researcher addressed this by consciously appealing to the expertise of the subjects, and intentionally conveying curiosity in tone and prompt structure. Instead of starting the interview by asking what the respondent's job entailed, the researcher indicated what data had already been analyzed and expressed curiosity about the findings. The researcher also freely

	Staten Island	Bronx	Brooklyn	Manhattan	Queens
Total Capacity	720	9065	7635	15915	2185
Average Census	679	8875	6839	13909	2018
Number of Facilities	2	19	17	43	5
% of Slots Filled on Average	94.3	97.9	89.5	87.4	92.4

Figure 4. Census vs. Capacity by Borough

shared initial research findings with the respondents, establishing a sense of reciprocity. The remainder of the interviews were more informative.

Results

This project investigated three questions. Research will examine the data regarding each question in order.

Q1: Has opiate agonist treatment availability expanded in New York City under CSAT? At first look, policy change has had no effect on treatment availability. There were 86 treatment facilities both at the beginning and end of this study. The static number of clinic sites and capacity from 2001 – 2003 could indicate that the proportion of addicts getting treatment remains low. Further analysis of OTPs in New York City shows that, on average, each borough has a capacity that is higher than the census. Capacity numbers could be lowered to save money, but since every borough has some sites where census is consistently at or over capacity, it makes more sense to shift capacity to consistently high demand sites. New York City's five borough divisions are useful units of analysis for further examination.

Staten Island has two methadone treatment facilities, both operated by Staten Island University Hospital. Neither of the clinics experienced a change in capacity during the study period. Figure 4 shows that only 94.3% of the Staten Island borough capacity is filled on average. Clinic 1 has a capacity of 500; the highest census was 478, attained during the first quarter of 2001. In quarter four of 2001, the census reached a low of 440. Each of the other quarters varied between these numbers. There are no variation patterns to be found. These results are very similar to Staten Island's other clinic, the only difference being that Clinic 2 has a capacity of only 220 (Figure 5).

An interview was completed with a staff member involved with several aspects of methadone treatment program at Staten Island University Hospital, from attending task force meetings to producing the capacity and census reports. Though aware of the policy changes of 2001, the respondent was quick to point out no change in administrative duties of treatment providers have been noted. Respondent also reported that in a recent meeting with administrators, there was no sense of agreement between groups. The

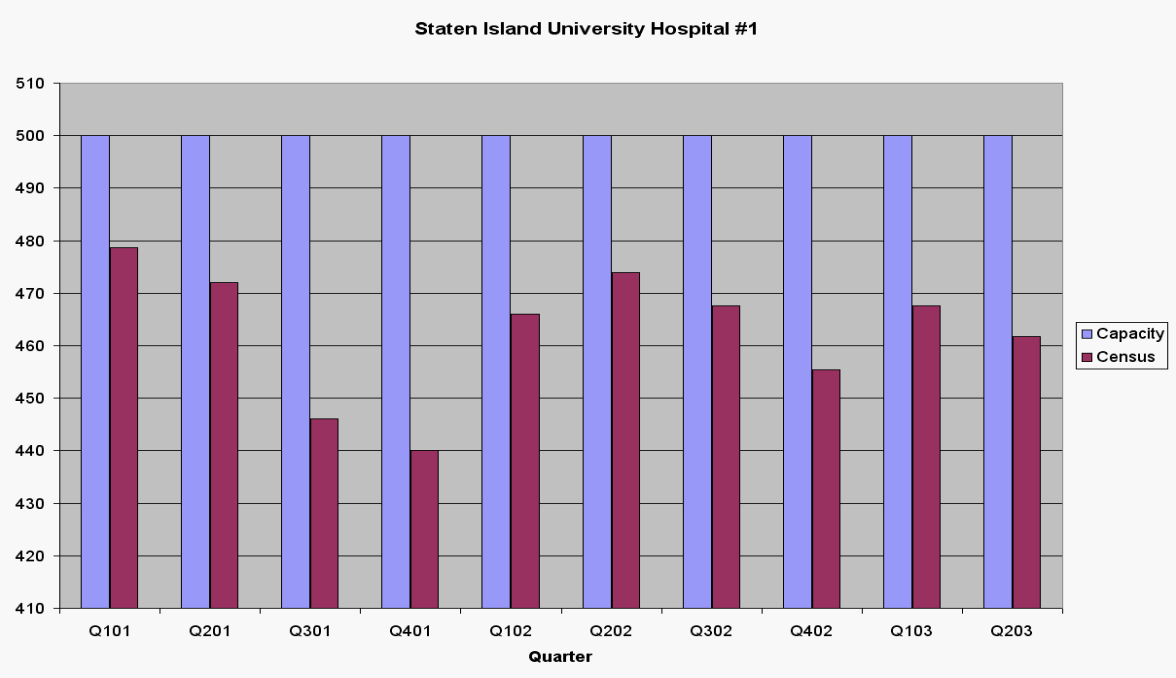

Figure 5. Staten Island Clinic 1

purpose of this meeting was to discuss best practices, however, only a sense of confusion was reported. For some time, there has been frustration with lack of management procedures. The respondent was unsure of which entity (treatment provider or government regulator) should be establishing such policies and procedures. When asked to share opinions about why the policy goals are not being met, respondent hypothesized that although treatment regulation is now under the guidance of the CSAT, funding deficits and inattention to drug treatment services continue. The effort of government agencies has not increased.

By looking at the capacity and census numbers, and analyzing the qualitative data for Staten Island, it is clear that treatment availability has not increased during the study period.

Queens is geographically the largest borough in New York City. However, there are only five methadone providers. Two of the clinics saw an overall decrease in census numbers. City Hospital Center – Elmhurst had a steady capacity of 400, but did undergo a census decrease to 350 by Quarter Three 2002. From that point, the numbers remained fixed. This leaves 50 unused slots that could be of better use at a high demand facility.

Narco Freedom – Bridge Plaza, also in Queens, was one of the most stable clinics regarding census. The census varied only slightly between 600 and 625 throughout the study period. However, with the capacity set at 760 it is still consistently and significantly exceeding the reported census. By discerning the location of this treatment site, one hypothesis about such a high capacity seems plausible. This site is closest to Manhattan, which is the center of New York City, and has the greatest population density and also houses the highest number of opiate agonist treatment sites of all the boroughs. Locating Narco Freedom – Bridge Plaza closest to Manhattan is an important finding, allowing authorizing agencies to determine where the need for high capacities lies (Figure 6). Analysis of the remaining OTPs in Queens indicated no analytical patterns, though census numbers were varied and discrepancies

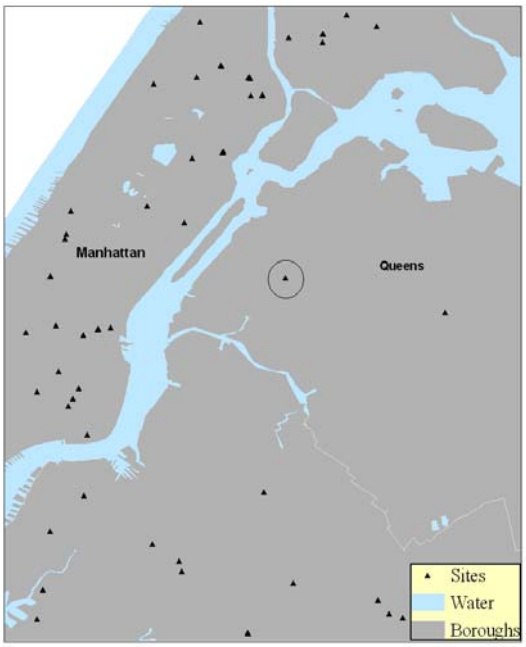

Figure 6. Narco Freedom Bridge

between capacity and census were evident.

One interview was obtained from a methadone treatment provider in Queens. When asked about what appear to be low treatment site numbers given the size of Queens, the subject spoke of Queens as a suburb, comprised of several neighborhoods with a family oriented setting. The impact of this statement will be reviewed later.

The respondent also said that although the largest in size, Queens has not seen the influx of population growth that Brooklyn has. The respondent was also questioned about the new polices surrounding opiate agonist treatment and if any changes had occurred in this facility. Respondent reported no knowledge of policy changes and that although there might have been a change at the federal or state level, there have not been any changes noticed at this site.

Brooklyn has 17 authorized opiate agonist providers with an average census of 89.5%. The most interesting figures found while analyzing the data are those for the St. Mary's Hospital Classon site. St. Mary's has a capacity of 400. Over the study period, there was not one quarter during which the census numbers were below the capacity. The census reached a high of 450 during 2002 Quarter Two, almost 13% over capacity. Using the site map this problem can be looked at more closely. Figure 7 shows that St. Mary's Classon is very close in distance to Interfaith Medical Center. Interfaith's figures show that for two years of the study it was 50% under capacity. This leads to the conclusion that St. Mary's Classon could easily refer some of their clients to Interfaith in order to meet capacity requirements. The researcher attempted to contact an administrator at St. Mary's Classon but was unable to secure an interview.

An interview with an OTP administrator in Brooklyn indicated the absence of networking among providers. Respondent indicated limited knowledge of other sites, but detailed knowledge of the OTP on site. Respondent demonstrated detailed theory and knowledge about the needs of the clients,

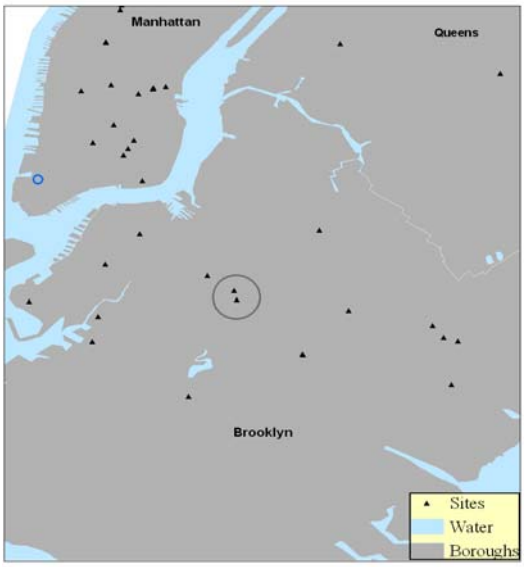

Figure 7. St. Mary's Classon vs. Interfaith

people who are "very sick" and need the services of the provider. Of all subjects interviewed, this respondent was the only one who expressed care, compassion and a helpful attitude toward OTP clients. Quantitative and qualitative data on this respondent's clinic indicates that it is an OTP with strong administrators and superior treatment quality. This clinic maintains a census that is just slightly under their capacity of 200.

Figure 7. St. Mary's Classon vs. Interfaith

Bronx has the second most OTPs among the boroughs (19). It has the highest average census at 97.9. Each of the sites show remarkable use of capacity numbers. This indicates that the need for methadone treatment is there and clients are readily seeking addiction services. One setback in Bronx is the cluster of ten OTPs within a small area of four square miles. This leaves nine sites in the remaining geographic area of the borough. The cluster of sites is very close to Manhattan, with the Harlem River as the separation landmark. Harlem lies on the other side of the river, which contains 14 OTPs, indicating that there is an abundance of clients in need of services in this area (Figure 8). An interview was completed with an administrator of an outlying Bronx OTP. Respondent was asked about the cluster and why the rest of the Bronx is lacking a significant number of clinics. Respondent replied with similar responses that were obtained from the administrator in Queens. Outer Bronx is a residential community that leans more towards serving single family residents. Community impacts will be discussed later.

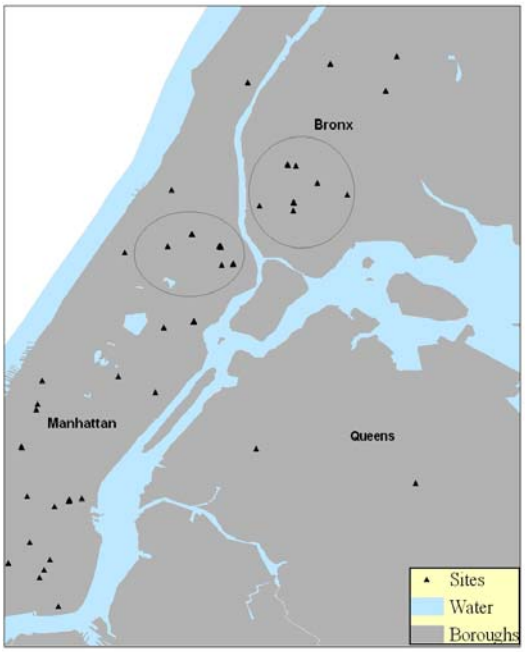

Figure 8. Bronx and Harlem OTPs

Manhattan contains the most OTPs (43) and has an average census of 87.4%. For purposes of this study, the researcher divided Manhattan into two geographic areas of interest, simply north and south. The north portion of the island encompasses Harlem. There are a total of 14 OTP sites in this vicinity. Several sites are located towards the south end of the island, also known as downtown.

In an interview, an administrator of an OTP site located in downtown was not familiar with the policy changes of 2001. The respondent was not helpful in reporting data and did not show interest in supporting the research. Implications of the results from Manhattan will be further reviewed in the discussion section.

Q2: Have primary health care settings pursued authorization to provide methadone maintenance treatment in New York City under CSAT? The first indication that health care settings have not begun to pursue authorization can be seen in the number of OTP sites through the study period. No additional sites

have been authorized since the beginning of 2001, the same time that the policy changes took place. Second, census averages for each borough have remained static. Finally, administrators convey wide variation in awareness of policy change, and universally respond no changes in policy or administration at their respective clinics.

Q3: Can GIS be an effective research tool in policy evaluation? Policy evaluation and assessment can be improved with the use of GIS as an aid. The authorizing agency of New York state uses GIS in many of their programs, primarily prevention. Figure 9 provides an example of how the agency can extend GIS to policy evaluation. OASAS has already mapped risk indicators like poverty and substance abuse rates (from sources like the U.S. Bureau of the Census and the New York State Department of Health) to predict where drug treatment services may be needed. Maps like the one produced in this study can help even those stakeholders far removed from any site activities comprehend logical site and capacity changes like those suggested in Figure 9.

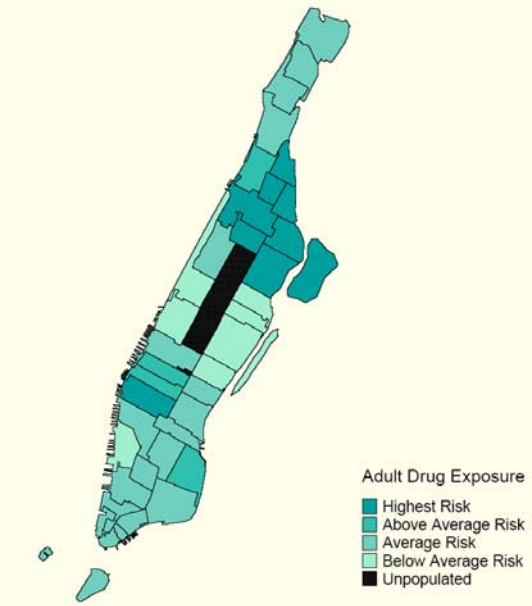

Figure 9. Manhattan Adult Drug Risk Exposure

Discussion

The results section indicated that treatment availability has not increased in New York City. Reasons for this will be discussed in the following section.

The authorization process of OTPs or any drug or alcohol treatment facility is extensive and takes a considerable amount of time. Each facility must retain permission from local government and meet with community officials. The same procedure must be followed even to change capacity at any site.

People understand the need for methadone and drug treatment, but they do not want it in their neighborhood, a social phenomenon referred to as "Not in My Backyard" (NIMBY) syndrome. Respondents from Queens and Bronx specifically cited the "residential feel" of the area as a factor in site capacity. Community members seem likely to oppose a drug treatment facility placement or expansion in their neighborhoods. This is distressing in light of research indicating that addicts in residential areas are very responsive to treatment (SAMSHA 2003). This responsiveness is related to social control theory. Members of society are more prone to adhere to accepted social behavior when they hold more of a stake in the local community. More satisfying social roles in families, jobs, church, etc., provide powerful incentives to choose behaviors that meet socially acceptable standards, and avoid behaviors which violate those standards.

The lack of OTPs in residential areas of New York City requires people that are in need of services to travel

longer distances in order to get treatment. This distance may be the deciding factor in whether addicts reach out for treatment.

This logic may also explain why there are so many OTPs in Manhattan. Millions of people commute into Manhattan on a daily basis. A complementary explanation is that addicts may choose to seek treatment near their places of work to minimize the risk of exposure and associated stigma for themselves and their families.

Another barrier to treatment expansion could be inattention to methadone treatment practices. Authorized programs are recertified every three years and are intended to ensure that client / staff ratios are adequate. According to the OASAS, methadone and other drug treatment programs used to receive more attention from administrators and authorization agencies. Interviewees from the OASAS indicated that the agency has seen major

Figure 10. World Trade Center Site

budget cuts in the past several years, much like the rest of the country. Respondents said that most of the budget cuts took place after 9/11. These budget cuts are responsible for the insufficient recertification process. If OASAS had more money, they could put more effort in recertification.

Results also indicated that some clinics could shift capacity to others in need. Again, the process for changing capacity appears to be burdensome. this is in reference to the lengthy application process. Related to this are the OTPs

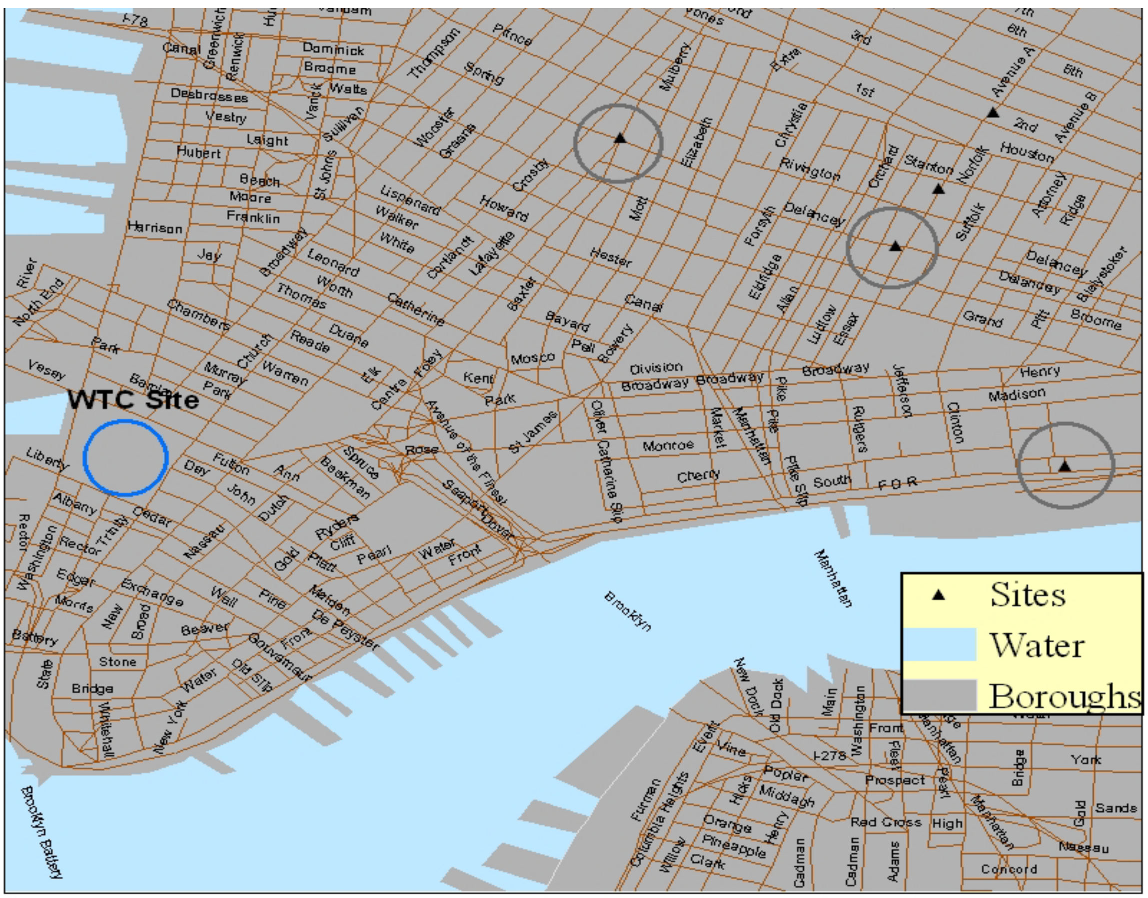

Figure 10. World Trade Center Site

with a census routinely exceeding capacity. The OASAS said that this circumstances is considered a problem when it starts happening "on a regular basis" and is "more than 5-10%." Again, because of budget cuts, authorizing agencies can not devote as much time that is necessary to monitor these programs as closely as they would like to.

Finally, staff at OASAS speculated that the terrorist attacks on New York City on 9/11/01 explained low census numbers in Manhattan clinics, for which the average utilized capacity was 87.4% during the study period. A more careful review of data for the three sites located closest to Ground Zero was completed (Figure 10). Massimo P. Degiarde did experience a slight downturn in census in the six months following 9/11, but has steadily increased for the last 14 months of the study period. Even at its lowest census quarter, this clinic's census was above capacity. Lower Eastside Service Center has experienced a steady drop in census since 9/11, but remains at about 90% of capacity. BIMC Gouverneur has experienced a steady increase in census since 9/11, a trend begun before that quarter, and is now above but close to capacity. Clearly, these patterns do not explain the low census rates for this borough. The data also reveal that at least 20 Manhattan clinics are consistently at 25 – 80% of capacity.

Surprised by my results, the staff of OASAS conducted their own analysis, and affirmed these results.

Conclusion

This research shows no signs of increasing treatment availability for heroin addicts in the New York City metropolitan area. However, the time frame of this study must be taken into account. There has only been three years of possible study since the policy changes. Policy changes often take many years to evoke measurable change. Longitudinal research must be completed in order to see changes that may continue to take place.

An area of further research should include other social variables that may have a direct impact on opiate agonist treatment facilities. Quantitative data that relates to socioeconomic status should be compared to geographic locations of the OTPs. This may or may not explain clusters of OPTs throughout the boroughs.

Information received through interviews indicates that the lack of money due to budget cuts is the major reason that availability has not increased. In addition, residential communities need to be more accepting to OTPs in order for availability to increase. Primary health care settings must be educated as to the potential of authorization, leading to an increase in availability. Political and public awareness about the importance of methadone treatment must be spread. The policy changes seem to be a result of a few influential administrators that were successful in acting upon Congress. However, the policy change has not had any influence on the methadone treatment practices in New York City and primary health care providers simply need less burdensome authorization processes.

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References

Attewell, Paul, and Dean R. Gerstein. "Government Policy and Local Practice." American Sociological Review 44.2 (1979): 311-327.

Ball, John C., et al. "Reducing the Risk of AIDS Through Methadone Maintenance Treatment." Journal of Health and Social Behavior 29.3 (1988): 214-226.

D'Aunno, Thomas, and Harold A. Pollack. "Changes in methadone treatment practices: Results from a national panel study, 1988-2000." JAMA 288.7 (2002): 850-856.

Minnesota. Department of Human Services. Minnesota's Chemical Health System: A Report to the Minnesota Legislature. Saint Paul: n.p., 2003.

Office of Alcoholism and Substance Abuse Services. New York State. http://www.oasas.state.ny.us 15 October, 2003.

Substance Abuse and Mental Health Services Administration. www.samhsa.org. 15 October, 2003.

United States. 106th Congress. The Drug Addiction Act of 2000. 26 September, 2003.